We claim:

1. A chemical vapor deposition (CVD) process for depositing SiO_2 films on a substrate, said process comprising the steps of:

(a) disposing the substrate within a chemical vapor deposition reaction chamber;

(b) introducing a gas volume of $Si0_2$ precursors into said chamber;

(c) admitting a gas volume of ozone into the chamber;

(d) exposing the volume of gases to a source of high intensity light to increase the atomic concentration of oxygen in the reactive gas volume.

2. The method of Claim 1 wherein the SiO_2 precursor is selected from the group consisting of TEOS, TMCTS (tetramethylcyclotetrasiloxane), DES (diethylsilane), DTBS (ditertiarybutylsilane), TMOS (tetramethylorthosilicate) and FTES (fluorotriethoxysilane).

3. The method of Claim 2 further comprising the step of introducing a gas volume of a dopant source for the SiO_2.

4. The method of Claim 3 wherein the dopant source for CVD deposition of the SiO_2 film is selected from the group consisting of triisopropylborate, TMB (trimethylborate), TEB (triethylborate), TEPo (triethylphosphate), TEPi (triethylphosphite), TMPo (trimethylphosphate), and TMPi (trimethylphosphite).

5. The method of Claim 3 further comprising the step of introducing a gas volume of a carrier gas into the reaction chamber, to regulate the uniformity of film deposition on the substrate.

6. The method of Claim 5 wherein the dopant source for CVD deposition of the SiO_2 film is selected from the group consisting of triisopropylborate, TMB (trimethylborate), TEB (triethylborate), TEPo (triethylphosphate), TEPi (triethylphosphite), TMPo (trimethylphosphate), and TMPi (trimethylphosphite).

7. The method of Claim 5 wherein the substrate is heated to a temperature within a range of 200° C. to 700° C.

8. The method of Claim 7 wherein the substrate is heated to a temperature of about 480° C.

9. The method of Claim 6 wherein the substrate is heated to a temperature within a range of 200° C. to 700° C.

10. The method of Claim 6 wherein the substrate is heated to a temperature of about 480° C.

11. The method of Claim 1 further comprising the step of introducing a gas volume of a dopant source for the SiO_2.

12. The method of Claim 1 wherein the dopant source for CVD deposition of the SiO_2 film is selected from the group consisting of triisopropylborate, TMB (trimethylborate), TEB (triethylborate), TEPo (triethylphosphate), TEPi (triethylphosphite), TMPo (trimethylphosphate), and TMPi (trimethylphosphite).

13. The method of Claim 1 further comprising the step of introducing a gas volume of a carrier gas into the reaction chamber, to regulate the uniformity of film deposition on the substrate.

14. The method of Claim 1 wherein the substrate is heated to a temperature within a range of 200° C. to 700° C.

15. The method of Claim 1 wherein the substrate is heated to a temperature of about 480° C.

16. The method of Claim 2 further comprising the step of introducing a gas volume of a carrier gas into the reaction chamber, to regulate the uniformity of film deposition on the substrate.

17. The method of Claim 2 wherein the substrate is heated to a temperature within a range of 200° C. to 700° C.

18. The method of Claim 2 wherein the substrate is heated to a temperature of about 480° C.

19. The method of Claim 3 wherein the substrate is heated to a temperature within a range of 200° C. to 700° C.

20. The method of Claim 4 wherein the substrate is heated to a temperature within a range of 200° C. to 700° C.

21. The method of Claim 3 wherein the substrate is heated to a temperature of about 480° C.

22. The method of Claim 4 wherein the substrate is heated to a temperature of about 480° C.

23. A chemical vapor deposition (CVD) process using ozone, for depositing films on a substrate, said process comprising the steps of:

a) disposing the substrate within a chemical vapor deposition reaction chamber;

(b) introducing a gas volume of a preselected reaction precursor compound into said chamber;

(c) admitting a gas volume of ozone into the chamber;

(d) exposing the volume of gases to a source of high intensity light to increase the atomic concentration of oxygen in the reactive gas volume.

24. A chemical vapor deposition (CVD) process for depositing films on a substrate, said process comprising the steps of:

a) disposing the substrate within a chemical vapor deposition reaction chamber;

(b) introducing a gas volume of a first preselected reaction precursor compound into said chamber;

(c) admitting a gas volume of at least a second preselected reaction precursor compound into said chamber;

(d) exposing the volume of gases to a source of high intensity light to increase the atomic concentration of reaction compounds in the reactive gas volume.

add A1

add C4